

Seminar 7

Logistics Costs. Supply Chain Management

1. The concept of logistics costs and expenses, their differences and the relevance of accounting and control.
2. Cost optimization algorithm.
3. Directions of accounting and cost control in the organization.
4. Classification of logistics costs.
5. Contents of the concept of total costs in logistics.
6. Supply chain management: definition, objectives, main areas of the organization that supply chain management is focused on.
7. Monitoring supply chains, list the stages of its implementation.

1. The concept of logistics costs and expenses

In the conditions of growing competition in the market, when it is increasingly difficult for enterprises to make a profit by increasing sales volumes or improving methods of product promotion, one of the main tools for obtaining competitive advantages is managing the costs of physical product distribution. The efficiency of a manufacturing or trading enterprise and its competitiveness are directly related to the efficiency of the control system over operating costs.

Logistics costs are the sum of all costs associated with the implementation of logistics operations: placing orders for the supply of products, purchasing, storing incoming products, in-house transportation, intermediate storage, shipping, external transportation, as well as costs for personnel, equipment, premises, warehouse stocks, and for the transfer of data on orders, stocks, and deliveries.

On average, an enterprise's logistics costs account for 10-17 percent of its total income, and in some industries this figure reaches 40-45%. An analysis of the structure of logistics costs shows that the largest share is made up of inventory management costs (20-40%), transportation costs (15-35%), and logistics administration costs (9-14%). The share of logistics costs in the total costs of enterprises continues to grow, as supply chains become more complex and customer demands for service quality increase. Therefore, control and cost reduction tasks are becoming a priority for domestic enterprises. At the same time, a simple path to cutting costs across all cost items, as is common in many enterprises, can lead to a weakening of the enterprise. In this case, it is advisable to use economic compromises, when an increase in the

costs of performing one logistics operation leads to a decrease in total costs, an increase in the level of customer service, or an increase in profits.

2. Cost optimization algorithm

The main results of the logistics service at the enterprise are:

- ✓ reduction of overall costs and expenses for ensuring physical movement of goods;
- ✓ optimal allocation of resources for the performance of logistic functions and operations based on economic compromises;
- ✓ achieving the optimal level of customer service.

The key points in managing the processes of physical movement of goods at the macro and micro levels should be the accounting and control of logistics costs and expenses.

Logistics costs represent the costs of labor, material, financial and information resources that are caused by the performance of logistics functions and operations by enterprises.

Costs arise from poor planning of warehousing, inventory and transportation costs. Therefore, costs need to be eliminated and costs optimized.

In terms of their economic content, logistics costs partially coincide with the costs of production and commodity circulation.

If the performers of logistics operations and functions are not integral parts of the enterprise, then logistics costs represent payment for services to specialized enterprises that carry out warehousing, forwarding and other types of work.

The cost optimization algorithm may include the following main steps:

- ✓ correct cost calculation and identification of expenses;
- ✓ analysis of the composition of costs and expenses;
- ✓ development of options for reducing costs and eliminating expenses;
- ✓ making decisions to reduce overall costs, taking into account the increase in expenses on individual components of the logistics system.

An approximate cost optimization algorithm may include the following steps :

1. **Generalization of expenses** . It is necessary to understand the structure of expenses; to do this, you need to collect all expenses for the past months in single tables. You also need to prepare cash flow reports, which will reflect in detail all significant expense and income items.

2. **Grouping expenses** . If there are no ready-made reports or accounting systems, then the company's expenses will have to be additionally grouped. For example, combine the purchase of new computers and faxes into the article "Purchase of equipment". As a result, you will get the main areas of spending the company 's funds - salaries of employees, rent, taxes and fees, advertising, purchase of basic and auxiliary materials.

3. **Segmentation of expenses** . The company's expenses can be divided into two large groups: fixed and variable. The first group includes expenses that do not depend on external factors and business efficiency.

4. **Determining the materiality of costs** . To do this, you need to assess the impact of costs on revenue and/or expenses.

5. **Cost Cause and Effect Analysis** . At this step, costs need to be ranked , for example, on a scale from 1 to 10, where the highest score is costs without which the company cannot exist in principle, and the lowest score is costs without which the company can continue to exist without problems. Anything below 5 points is immediately subject to reduction. Anything above is discussed.

6. **Optimization of business processes** . At each stage, you can reduce time, money or the number of employees involved in this stage. For example, production technology, the route of movement of goods, the storage time of goods in the warehouse.

7. **Integration with new partners** . You can share with your partners the costs of maintaining a production base, warehouse or accounting department - this way you can significantly reduce your costs.

To select a cost optimization method, the manager must conduct a comprehensive analysis of the current activities of the enterprise and identify weak points. Then, based on the data obtained, select the necessary method based on the general goal of the enterprise.

3. Directions of accounting and cost control in the organization

At present, it is necessary to implement systems for accounting and control of costs and expenses at enterprises in various fields of activity.

The assessment of actual costs can be carried out in different areas of the enterprise's activities:

- ✓ by logistic functions;
- ✓ for logistics operations;
- ✓ by performers;
- ✓ to suppliers or to consumers.

The location of cost measurement should be chosen in accordance with the enterprise's logistics strategy.

4. Classification of logistics costs

Logistics costs are formed as a result of the functioning and interaction of supply channels, sales and technological processes of the enterprise. In general, the logistics costs of an individual enterprise can be represented as the sum of three components: costs of supply and

transport chains; costs of production and technological or operational chains; costs of transport and sales chains.

Supply chain costs consist of the following elements:

- ✓ shipping costs;
- ✓ warehouse costs in the supply system;
- ✓ cargo handling costs ;
- ✓ costs of information support for supplies;
- ✓ insurance costs;
- ✓ customs costs for imported goods.

Costs of production and technological chains relate to internal logistics and include the following elements:

- ✓ costs of transportation within the enterprise;
- ✓ costs of storing work in progress inventory;
- ✓ costs of information support for production or trade and technological processes;
- ✓ costs of other internal logistics functions and operations.

Costs of supply chain channels consist of the following elements:

- ✓ costs of delivering goods to customers;
- ✓ costs of warehousing in the distribution system;
- ✓ cargo handling costs ;
- ✓ costs of information support for sales;
- ✓ insurance costs in the distribution system;
- ✓ customs costs for exported goods;
- ✓ expenses for operating a dealer network.

in the composition of logistics costs the costs of implementing financial transactions that ensure the movement of material flows, and logistics administration.

Logistics costs include losses from the immobilization of financial resources in work in progress and finished goods, as well as damage from insufficient customer service.

Logistics costs constitute one of the largest items of enterprise expenses, and in terms of their volume they are second only to the costs of purchasing raw materials, materials and components of industrial enterprises. When analyzing logistics costs, it is necessary to consider logistics processes comprehensively.

Costs in logistics systems can be **fixed and variable, direct and indirect , controllable and uncontrollable, actual and planned.**

5. Contents of the concept of total costs in logistics

To improve the logistics system of an industrial or commercial enterprise, it is necessary to use a set of methods and indicators that evaluate its effectiveness. The concept of total costs was formulated by G. Lewis, J. Culliton and J. Steele in the 1950s and became the basis for the development of logistics. The main idea of the concept of total costs is that a systematic approach to managing material flows allows you to regroup costs of various types and thereby reduce the total costs of moving raw materials and goods from the source of the total material flow to the end consumer. In this case, all logistics operations at the enterprise are considered as a single whole, and all costs associated with them are assessed simultaneously to ensure the planned level of customer service.

The responsibilities of a logistics specialist overseeing logistics cost management include the following functions:

- ✓ accounting of logistics costs by types of enterprise activities;
- ✓ development of a system for assessing logistics costs and expenses;
- ✓ analysis of the total costs of operating a logistics system;
- ✓ control over logistics costs and expenses.

One of the reasons holding back the widespread use of logistics in Russia is the unresolved issue of assessing the effectiveness of its application.

The main problems in assessing the effectiveness of the use of a logistics system:

- ✓ lack of information on logistics costs and expenses at the enterprise;
- ✓ lack of sound methods for accounting for logistics costs and expenses;
- ✓ the difficulty of tracking the mutual influence of decisions in different areas of cost generation.

Difficulties in assessing the efficiency of logistics at an enterprise are mainly related to the existing methods of cost accounting, which do not allow for the allocation and control of logistics costs, and, consequently, the assessment of the effectiveness of the corresponding logistics functions and operations. Existing accounting systems in the Russian Federation traditionally distribute costs into large groups. In the established accounting practice, costs are grouped on a natural basis or by their "nature", for example, wages, depreciation charges, and not by types of work and areas of activity.

In a traditional enterprise, it is almost impossible to determine the costs of storing a unit of production or of carrying out a specific logistics operation (order picking or cargo rotation in a warehouse).

Another serious drawback of traditional reporting is that it does not single out inventory management costs as a separate group. The cost accounting system of accounting programs does not determine costs associated with the "dead" capital in stocks of materials, work in progress

and finished goods, losses from a shortage of inventory and an insufficient level of logistics service. The fact that material stocks are subject to losses over time, a decrease in quality and loss of consumer properties is practically not taken into account in the costs. All this significantly underestimates the final cost indicators and leads to opacity of the inventory management system at the enterprise. As a result, managers do not receive enough information to make decisions on the size of purchased lots and the amount of safety, current and seasonal stocks. Thus, the use of the concept of general costs and accounting for costs for the performed logistics functions and operations allows you to receive additional profit and ensure an acceptable level of customer service. Effective logistics management at an enterprise occurs when an optimal ratio is established between reducing logistics costs, increasing profits and improving the quality of customer service.

Thus, the concept of total costs in logistics **is based not on reducing costs in individual links of the logistics chain, but on the analysis of costs of all links** . At the same time, costs for individual procedures and operations can be increased if this leads to a reduction in costs of the entire logistics chain.

The aggregated composition of total costs includes:

1. **Operating costs of logistics** . Costs of loading and unloading operations, transportation, control, storage, cargo handling .
2. **Administrative and management (transaction) costs** . Include salaries of administrative and management personnel of the logistics service, search for contractors, etc.
3. **Costs associated with the immobilization of funds in inventories** . They take into account the freezing of the company's working capital in inventories circulating in the company's divisions or in the supply chain as a whole.
4. **Lost profits (lost sales)** - "fictitious costs". They characterize the efficiency of making certain logistics decisions, which in the accounting sense are fictitious costs and reflect the potential loss of profits due to insufficient quality of logistics services.

The goal of the shared cost concept is to regroup costs in the supply chain so that the level of total costs for producing and distributing goods is reduced. For example, by using a just-in-time supply system, intermediate warehouses can be eliminated. Although transportation costs may increase in this case, total costs in the distribution network will decrease.

6. The concept of supply chain management is based on the principles of strategically building relationships with customers and intermediaries. It consists of synchronizing the company's business processes involved in the movement of goods.

There are 3 main levels of supply chain management:

1. Strategic (Strategic Supply Chain Management, SSCM),
2. Tactical (Supply Chain Planning, SCP),
3. Operational (Supply Chain Execution, SCE).

At the top level, a strategy for developing supply chain management is formed and a possible set of their links is determined. The strategy allows identifying the need and assessing the effectiveness of investments in changing the company's infrastructure. The goal of strategic management is to minimize total logistics costs, including costs for purchasing, manufacturing, storing, distributing and delivering products while achieving the target market coverage and service level.

At **the strategic level** of supply chain management, the following tasks are solved:

- 1) creation of an optimal logistics infrastructure that corresponds to the company's development strategy and ensures the reliability of the supply chain;
- 2) A development strategy is determined, which includes the overall required level of capacity of the logistics infrastructure and each element of the supply chain separately, determination of the specialization of industrial and/or warehouse sites by product in accordance with marketing research on the level of demand and their geographic location.
- 3) management of resources, stocks and goals of the entire supply chain, timing of planned changes and the size of their steps;
- 4) optimization of costs and reduction of risks associated with the provision of logistics services by counterparties;
- 5) formation of a set of logistics services offered to customers, determination of the target level of service.

The following main supply chain management strategies can be distinguished: the strategy of comprehensiveness, the strategy of focus on the distribution channel, the strategy of individualized customer service and the strategy of operational dynamism.

In the all-inclusive strategy, the main goal is to ensure the availability of high-demand products and their competitive cost, and involves the creation of a wide production and distribution network focused on brand promotion.

In a channel- focused strategy , the primary goals for the manufacturer are quality, price, and attractiveness of the products or services to the distribution channels; the distribution channel is responsible for selling the products or services to end consumers.

The strategy of individual customer service implies increasing the value of the products or services sold by taking into account the individual needs of customers. The price of products or services sold by companies under this strategy is usually significantly higher than the market average .

The strategy of operational dynamism means managing supply chains of products and services sold under market conditions; the main goals are the company's adaptation to competition in the market, coordination and control of the actions of all participants in the supply chain, affordable and market price. This strategy allows for prompt changes in the configuration of the chain and product characteristics to meet changing consumer demands.

At the tactical level, the supply chains themselves are created: the set and sequence of links are determined, incoming and outgoing flows are formed, the budget is planned. Tactical planning has a direct impact on the company's performance indicators, pricing and largely determines their competitiveness.

The tactical level defines the period of management and planning of existing resources on a horizon from one month to a year and does not imply a change in the goals and principles defined by the supply chain management strategy.

7. Supply chain monitoring is the reliable real- time tracking of logistics process parameters , as well as physical support of material and transport flows .

The main tasks of supply chain monitoring are:

- continuous information monitoring of indicators of the strategic, tactical and operational logistics plan;
- providing management personnel with reliable and up-to-date information on the progress of the logistics process and supply chain in real time;
- widespread implementation of electronic document management and EDI technologies (Electronic Data Interchange) is translated as "electronic data interchange". It is a system that allows suppliers and customers to exchange electronic standardized messages and data in order to transmit commercial information when organizing information exchange in the supply chain;
- ensuring electronic control over the delivery of goods and facilitating the implementation of customs procedures during export-import operations;
- ensuring tracking of vehicles and cargo using satellite communication and navigation systems;
- information and analytical support for modern technologies for transporting goods in the supply chain: intermodal , multimodal , mixed, combined, terminal, etc.;
- use of automatic identification systems for large cargo units and transport containers in supply chain management;
- generation of electronic notifications about the arrival of cargo for preliminary approval of the cargo handling schedule and certificates of delivery of goods to the carrier, forwarder, and customs.

Control technology can be used to monitor supply chains Tower (a software tool for visualizing supply chain processes). It helps centralize supply chain processes and operations in a single information space, which improves chain visibility and forecasting of operations.

Supply chain tracking can also be accomplished using software that, for example, allows you to visualize fixed and moving assets, track product flows, and detect potential failures and abnormal situations in real time.